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मानक

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IS 8271-5-12 (1990): Quartz Crystal Units Used for Frequency Control and Selection, Part 5: Series CX for Oscillators, Section 12: Quartz Crystal Unit Type CX-12 [LITD 5: Semiconductor and Other Electronic Components and Devices]



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Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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भारतीय मानक

आवृत्ति नियंत्रण और चयन में प्रयुक्त क्वार्ट्ज
क्रिस्टल इकाइयां — विशिष्टि

भाग 5 दोलकों के लिये सी एक्स श्रेणी

अनुभाग 12 क्वार्ट्ज क्रिस्टल इकाई टाईप सी एक्स-12

Indian Standard

QUARTZ CRYSTAL UNITS
USED FOR FREQUENCY CONTROL
AND SELECTION — SPECIFICATION

PART 5 SERIES CX FOR OSCILLATORS

Section 12 Quartz Crystal Unit Type CX-12

UDC 621.373.5

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

FOREWORD

This Indian Standard (Part 5/Sec 12) was adopted by the Bureau of Indian Standards on 17 May 1990, after the draft finalized by the Piezoelectric Devices for Frequency Control and Selection Sectional Committee had been approved by the Electronics and Telecommunication Division Council.

This standard shall be read in conjunction with IS 8271 (Part 1): 1981 'Specification for quartz crystal units used for frequency control and selection: Part 1 General requirements and tests (*first revision*)'.

This standard is based on JSS 50909 (1971) 'Detail specification for crystal unit, quartz styles QC 29, QC 30, QC 31, QC 32, QC 33, QC 34 and QC 35 issued by the Directorate of Standardization, Ministry of Defence, India. The type of quartz crystal unit covered in this standard is equivalent to style QC 35 of JSS 50909 (1971).

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of test or analysis, shall be rounded off in accordance with IS 2:1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

QUARTZ CRYSTAL UNITS USED FOR FREQUENCY CONTROL AND SELECTION — SPECIFICATION

PART 5 SERIES CX FOR OSCILLATORS

Section 12 Quartz Crystal Unit Type CX-12

1 SCOPE

1.1 This standard (Part 5/Sec 12) specifies detail requirements for the characteristics of quartz crystal unit Type CX 12 used for frequency control and selection in oscillators.

2 REFERENCES

2.1 The following Indian Standards have been referred to in this standard:

<i>IS No.</i>	<i>Title</i>
4570 (Part 6) : 1984	Specification for crystal unit holders: Part 6 Metal, solder seal, two-pin, crystal unit holder Type CX
8271 (Part 1) : 1981	Specification for quartz crystal units used for frequency control and selection: Part 1 General requirements and tests (<i>first revision</i>)

3 OUTLINE AND DIMENSIONS

3.1 Holder outline shall conform to Type CX [see IS 4570 (Part 6) : 1984].

4 MARKING

4.1 See 8 of IS 8271 (Part 1) : 1981.

5 CONSTRUCTION AND WORKMANSHIP

5.1 See 7 of IS 8271 (Part 1) : 1981.

6 TEST SCHEDULE AND DETAIL REQUIREMENTS

6.1 General Conditions for Test

See 9.2 of IS 8271 (Part 1) : 1981.

6.2 Test Schedule

The sequence and grouping of type, routine and acceptance tests shall be in accordance with 9.1 of IS 8271 (Part 1) : 1981.

6.3 Detail Requirements

The detail requirements applicable to this particular type of crystal unit shall be as specified in Table 1.

Table 1 Detail Requirements of Quartz Crystal Unit Type CX-12
(Clause 6.3)

Sl No.	Characteristic	Requirement
(1)	(2)	(3)
a)	Type of holder	CX (See 3)
b)	Frequency range	17 to 62 MHz
c)	Frequency tolerance:	
	i) Primary operating temperature range	± 20 ppm
	ii) Secondary operating temperature range	± 30 ppm
d)	Load capacitance	Infinity
e)	Mode of oscillation	Third mechanical overtone
f)	Temperature range:	
	i) Operating	$- 40^{\circ}\text{C}$ to $+ 90^{\circ}\text{C}$
	ii) Operable	$- 55^{\circ}\text{C}$ to $- 40^{\circ}\text{C}$, and $+ 90^{\circ}\text{C}$ to $+ 105^{\circ}\text{C}$
g)	Test set, calibration values and rated drive level	See Table 2
h)	Capacitance shunt	7 pF, <i>Max</i>
j)	Resonance resistance	40 ohms, <i>Max</i>
k)	Shock [as per 9.15 (Severity A) of IS 8271 (Part 1) : 1981]:	
	i) Frequency change permitted	± 5 ppm
	ii) Resonance resistance change permitted	± 10 percent
m)	Vibration [as per 9.16.1 (Severity A) of IS 8271 (Part 1) : 1981]:	
	i) Frequency change permitted	± 5 ppm
	ii) Resonance resistance change permitted	± 10 percent
n)	Temperature cycling:	
	i) Frequency change permitted	± 5 ppm
	ii) Resonance resistance change permitted	± 10 percent
p)	Ageing:	
	Frequency change permitted	± 5 ppm

Table 2 Test Set, Calibration Values and Rated Drive Level
[Table 1(g)]

Frequency Range	Calibration Value		Rated Drive Value	Test Set
	Resistance	Resistor		
MHz	ohms	Voltage Volts	mW	
(1)	(2)	(3)	(4)	(5)
From 17 to 62	40	0.28	2.0 ± 0.4	TS-683/TSM

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BUREAU OF INDIAN STANDARDS

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002
Telephones : 331 01 31, 331 13 75

Telegrams : Manaksanstha
(Common to all Offices)

Regional Offices:

Central : Manak Bhavan, 9 Bahadur Shah Zafar Marg NEW DELHI 110002	{ 331 01 31 331 13 75
Eastern : 1/14 C.I.T. Scheme VII M, V.I.P. Road, Maniktola CALCUTTA 700054	37 86 62
Northern : SCO 445-446, Sector 35-C, CHANDIGARH 160036	2 18 43
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